

Claims

I claim:

1. A method of stimulating the production of a petroleum well comprising:
pumping a first stimulant into the well, wherein said first stimulant comprises
dipentene; ethoxylated linear alcohol; a solvent comprised of naphtha; a product
formed from the reaction of alpha olephin with maleic anhydride; and a surfactant.
2. A method of stimulating the production of a petroleum well according to claim 1 wherein
said dipentene comprises at least about fifteen percent by volume of said first stimulant.
3. A method of stimulating the production of a petroleum well according to claim 2 wherein
said ethoxylated linear alcohol is a non-ionic surfactant
4. A method of stimulating the production of a petroleum well according to claim 3 wherein
said ethoxylated linear alcohol comprises at least about thirty percent by volume of said
first stimulant.
5. A method of stimulating the production of a petroleum well according to claim 4 wherein
said ethyl hexanol comprises at least about fifteen percent by volume of said first stimulant.
6. A method of stimulating the production of a petroleum well according to claim 5 wherein
said solvent further comprises isopropyl benzene, and vinyl acetate.
7. A method of stimulating the production of a petroleum well according to claim 6 wherein
said solvent comprises at least about ten percent by volume of said first stimulant.
8. A method of stimulating the production of a petroleum well according to claim 7 wherein
said product of alpha olephin and maleic anhydride comprises at least about ten percent by
volume of said first stimulant.

9. A method of stimulating the production of a petroleum well according to claim 1 wherein said surfactant comprises propylene oxide and ethylene block polymers.
10. A method of stimulating the production of a petroleum well according to claim 1 further comprising pumping a second stimulant into the well, said second stimulant comprising:
5 a product formed from the reaction of alpha olephin with maleic anhydride; a product formed from the reaction of polyether with maleic anhydride; a product formed from the product of alpha olephin and maleic anhydride further reacted with a long chain alcohol selected from the group comprising RCH_2CH_2CHO and $R(CHCH_3)CHO$ and mixtures thereof; a product formed from the reaction of dodecylbenzene sulfonic acid with a
10 pentene; 2 ethyl hexanol; 4-isopropenyl-1-methylcyclohexane; and a surfactant.
11. A method of stimulating the production of a petroleum well according to claim 10 where R is a carbon chain with at least twenty carbons.
12. A method of stimulating the production of a petroleum well according to claim 10 where said pentene is a dipentene.
13. A method of stimulating the production of a petroleum well according to claim 10 wherein
15 said second stimulant further comprises a demulsifier.
14. A method of stimulating the production of a petroleum well according to claim 10 further comprising pumping a solvent solution into the well, said solvent solution comprising dipentene and diesel.
15. A method of stimulating the production of a petroleum well according to claim 14 wherein
20 said solvent solution comprises about fifty percent by volume dipentene and about fifty percent by volume diesel.

16. A method of stimulating the production of a petroleum well according to claim 14 wherein said solvent solution is pumped into the well before said first or said second stimulant is pumped into the well.
17. A method of stimulating the production of a petroleum well according to claim 16 wherein a spacer is pumped into the well between said first stimulant and said second stimulant.
18. A method of stimulating the production of a petroleum well according to claim 17 wherein said spacer is diesel.
19. A method of stimulating the production of a petroleum well according to claim 10 wherein a spacer is pumped into the well between said first stimulant and said second stimulant.
20. A method of stimulating the production of a petroleum well according to claim 1 further comprising pumping a solvent solution into the well, said solvent solution comprising dipentene and diesel.
21. A method of stimulating the production of a petroleum well according to claim 20 wherein said solvent solution comprises about fifty percent by volume dipentene and about fifty percent by volume diesel.
22. A method of stimulating the production of a petroleum well according to claim 21 wherein said solvent solution is pumped into the well before said first stimulant is pumped into the well.
23. A method of stimulating the production of a petroleum well according to claim 20 wherein a spacer is pumped into the well between said first stimulant and said solvent solution.
24. A method of stimulating the production of a petroleum well according to claim 23 wherein said spacer is diesel.

25. A method of stimulating the production of a petroleum well according to claim 1 wherein said well is heated with steam prior to the introduction of said stimulant.
26. A method of stimulating the production of a petroleum well according to claim 1 wherein said well is heated with hot water prior to the introduction of said stimulant.
- 5 27. A method of stimulating the production of a petroleum well according to claim 10 wherein the well is in a formation and wherein a displacement fluid selected from the group comprising water and steam is pumped into the well, whereby the first and second stimulant may be forced into the formation.
28. A method of stimulating the production of a petroleum well according to claim 27 wherein said well is allowed to cool before returning said well to production.
- 10 29. A method of stimulating the production of a petroleum well comprising:
pumping a stimulant into the well, said stimulant comprising:
a product formed from the reaction of alpha olephin with maleic anhydride; a
product formed from the reaction of polyether with maleic anhydride; a product
15 formed from the product of alpha olephin and maleic anhydride further reacted with
a long chain alcohol selected from the group comprising RCH_2CH_2CHO and
 $R(CHCH_3)CHO$ and mixtures thereof; a product formed from the reaction of
dodecylbenzene sulfonic acid with a pentene; 2 ethyl hexanol; 4-isopropenyl-1-
methylcyclohexane; and a surfactant.
- 20 30. A method of stimulating the production of a petroleum well according to claim 29 where R is a carbon chain with at least twenty carbons.
31. A method of stimulating the production of a petroleum well according to claim 30 where

said pentene is a dipentene.

32. A method of stimulating the production of a petroleum well according to claim 31 wherein said stimulant further comprises a demulsifier.
33. A method of stimulating the production of a petroleum well comprising:
pumping a stimulant into the well, said stimulant comprising:
a product formed from the reaction of dodecylbenzene sulfonic acid with a pentene.
34. A method of stimulating the production of a petroleum well according to claim 33 wherein said stimulant further comprises a product formed from the reaction of alpha olephin with maleic anhydride.
35. A method of stimulating the production of a petroleum well according to claim 33 wherein said stimulant further comprises a product formed from the reaction of polyether with maleic anhydride
36. A method of stimulating the production of a petroleum well according to claim 33 wherein said stimulant further comprises a product formed from the product of alpha olephin and maleic anhydride further reacted with a long chain alcohol selected from the group comprising RCH_2CH_2CHO and $R(CHCH_3)CHO$ and mixtures thereof.
37. A method of stimulating the production of a petroleum well according to claim 36 where R is a carbon chain with at least twenty carbons.
38. A method of stimulating the production of a petroleum well according to claim 33 wherein said stimulant further comprises 2 ethyl hexanol.
39. A method of stimulating the production of a petroleum well according to claim 33 wherein said stimulant further comprises 4-isopropenyl-1-methylcyclohexane.

40. A method of stimulating the production of a petroleum well according to claim 33 wherein said stimulant further comprises a surfactant.
41. A method of stimulating the production of a petroleum well according to claim 33 where said pentene is a dipentene.
42. A method of stimulating the production of a petroleum well according to claim 33 wherein said stimulant further comprises a demulsifier.